

**ECONODRAIN<sup>®</sup> #18 SYSTEM - HYDRAULIC DATA**

Standard Depth & Slope <sup>1</sup>		
EPS Form Number	[Slope [S <sub>i</sub> ] = 0.5% or 0.005 ft/ft]	
	Min. (in)	Max. (in)
1818	12	12 1/2
1819	12 1/2	13
1820	13	13 1/2
1821	13 1/2	14
1822	14	14 1/2
1823	14 1/2	15
1824	15	15 1/2
1825	15 1/2	16
1826	16	16 1/2
1827	16 1/2	17
1828	17	17 1/2
1829	17 1/2	18
1830	18	18 1/2
1831	18 1/2	19
1832	19	19 1/2
1833	19 1/2	20
1834	20	20 1/2
1835	20 1/2	21
1836	21	21 1/2
1837	21 1/2	22
1838	22	22 1/2
1839	22 1/2	23
1840	23	23 1/2
1841	23 1/2	24
1842	24	24 1/2
1843	24 1/2	25
1844	25	25 1/2
1845	25 1/2	26
1846	26	26 1/2
1847	26 1/2	27
1848	27	27 1/2
1849	27 1/2	28
1850	28	28 1/2

Radius Bottom Trench (Std.)			
Q <sub>max</sub> <sup>2</sup> Flow (cfs)	Q <sub>max</sub> <sup>2</sup> Flow (gpm)	(F <sub>k</sub> is not a Flow Rate)	
		F <sub>k</sub> <sup>3</sup> (cfs)	F <sub>k</sub> <sup>3</sup> (gpm)
5.26	2359	72.84	32,691
5.63	2528	78.05	35,030
6.01	2698	83.30	37,388
6.39	2870	88.59	39,764
6.78	3042	93.92	42,155
7.17	3216	99.28	44,562
7.55	3391	104.67	46,981
7.95	3566	110.09	49,413
8.34	3742	115.53	51,856
8.73	3919	121.00	54,309
9.13	4097	126.49	56,772
9.53	4276	132.00	59,244
9.92	4455	137.52	61,724
10.32	4634	143.06	64,212
10.73	4814	148.62	66,707
11.13	4995	154.20	69,208
11.53	5176	159.78	71,716
11.94	5357	165.39	74,230
12.34	5539	171.00	76,750
12.75	5721	176.62	79,274
13.15	5904	182.26	81,803
13.56	6087	187.90	84,337
13.97	6270	193.56	86,876
14.38	6453	199.22	89,418
14.79	6637	204.90	91,964
15.20	6821	210.58	94,514
15.61	7005	216.27	97,067
16.02	7190	221.96	99,624
16.43	7374	227.67	102,183
16.84	7559	233.37	104,746
17.25	7745	239.09	107,311
17.67	7930	244.81	109,879
18.08	8115	250.54	112,450

Rectangular Trench (Optional Custom)			
Q <sub>max</sub> <sup>2</sup> Flow (cfs)	Q <sub>max</sub> <sup>2</sup> Flow (gpm)	(F <sub>k</sub> is not a Flow Rate)	
		F <sub>k</sub> <sup>3</sup> (cfs)	F <sub>k</sub> <sup>3</sup> (gpm)
6.29	2821	87.09	39,088
6.66	2988	92.26	41,407
7.03	3157	97.46	43,742
7.41	3326	102.70	46,093
7.79	3497	107.97	48,459
8.17	3669	113.27	50,837
8.56	3841	118.59	53,228
8.95	4015	123.95	55,631
9.33	4189	129.32	58,044
9.72	4364	134.72	60,468
10.11	4539	140.14	62,900
10.51	4716	145.58	65,342
10.90	4892	151.04	67,792
11.30	5070	156.52	70,250
11.69	5248	162.01	72,715
12.09	5426	167.52	75,187
12.49	5605	173.04	77,666
12.89	5784	178.58	80,151
13.29	5964	184.13	82,641
13.69	6144	189.69	85,138
14.09	6325	195.26	87,639
14.49	6506	200.85	90,146
14.90	6687	206.44	92,657
15.30	6868	212.04	95,172
15.71	7050	217.66	97,692
16.11	7232	223.28	100,216
16.52	7415	228.91	102,744
16.93	7598	234.55	105,275
17.34	7781	240.20	107,810
17.74	7964	245.86	110,349
18.15	8147	251.52	112,890
18.56	8331	257.19	115,435
18.97	8515	262.87	117,983

- Standard Depth is measured from the top of the grate rail to the trench invert.
- Q<sub>max</sub> is based on Manning's Equation n = 0.13 and S<sub>i</sub> = 0.5%. The outlet end depth flow area is utilized and the grate area is excluded. The flow values shown do not include site grade slope.
- F<sub>k</sub> is used to include site grade slope in trench flow calculations. The equation is: Flow, Q = F<sub>k</sub> × (S<sub>s</sub> + S<sub>i</sub>)<sup>1/2</sup> where S<sub>s</sub> is the site slope and S<sub>i</sub> is the trench form slope (ft/ft), (dimensionless).

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